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10/759,279

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EXAMINER

PIZIALI, JEFFREY J

ART UNIT

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2629

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/759,279	Applicant(s) ISHIZUKA, SHINICHI	
	Examiner Jeff Piziali	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/377,405.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/377,405, filed on 20 August 1999.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

Independent claim 1 is newly amended (see Page 2 of the 'Amendment Under 37 C.F.R. 1.111' filed 9 April 2007) to include the subject matter of "*applying a first non-zero reset voltage to all the scan lines*" (see lines 10-11). However, such subject matter appears to be nonexistent in the instant specification.

The instant specification teaches, "*One terminal of each scan switch 11 through 1n is connected to reverse bias voltage sources 41 through 4n for providing reverse bias voltages with*

Art Unit: 2629

*the other terminals connected to the **ground potential (0V)**, respectively"* (see Page 18, 2nd Paragraph of the Instant Specification).

The instant specification continues, "*That is, before scanning is shifted from the negative electrode line B1 of FIG. 8 to the negative electrode line B2 of FIG. 11, all drive switches 31 through 34 are switched over to the reset voltage sources 51 through 54 and as well all scan switches 11 through 1n are switched over to **0V for reset** as shown in FIG. 9"* (see Page 21, 3rd Paragraph of the Instant Specification).

Respectfully, such teachings would seem to directly contradict the newly amended (see Page 2 of the 'Amendment Under 37 C.F.R. 1.111' filed 9 April 2007) subject matter of "*applying a first **non-zero** reset voltage to all the scan lines*" (see claim 1, lines 10-11).

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Independent claim 1 recites the limitation "*a first **non-zero** reset voltage*" in lines 10-11. However, contradictorily, dependent claims 5, 6, 13, and 14 each recite "*said first reset voltage source provides a **ground potential***" (see line 2). These two reset voltage limitations seem to directly contradict one another. Therefore, the pending claims are deemed inconsistent, and accordingly, indefinite.

7. Remaining claims 2-4, 7-12, and 15-18 are rejected under 35 U.S.C. 112, second paragraph, as being dependent upon rejected base claims.

8. Claims 1-18 are further rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are between "*a first non-zero reset voltage*" (see independent claim 1, lines 10-11) and "*said first reset voltage source [providing] a ground potential*" (see dependent claims 5, 6, 13, and 14). It would be unclear to one having ordinary skill in the art how the reset voltage could be "*non-zero*" while simultaneously being provided as a "*ground potential*."

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Norman et al* (US 5,719,589 A) in view of *Sumi et al* (US 6,169,532 B1).

Regarding claim 1, Norman discloses a driving method of a light-emitting display [Fig. 1; 10] in which light-emitting elements are connected to intersections of positive electrode lines

Art Unit: 2629

[Fig. 3; 14] and negative electrode lines [Fig. 3; 13] arranged in a matrix, either one of said positive electrode lines or said negative electrode lines are employed as scan lines [Fig. 3; 13] with the other employed as drive lines [Fig. 3; 14], said driving method comprising; while scanning [Fig. 3; 42] the scan lines, connecting [Fig. 3; 36] drive sources [Fig. 3; 37] to desired drive lines in synchronization with the scanning, whereby allowing the light-emitting elements connected to the intersections of the scan lines and drive lines to emit light; and during a reset period after a scan period for scanning each scan line is complete and before scanning the following scan line is started, applying a first non-zero reset voltage [Fig. 3; V_R] (see Column 7, Lines 26-28) to all of said scan lines and applying a second reset voltage [Fig. 3; V_C] that is greater than said first reset voltage to all of said drive lines (see Column 5, Line 46 - Column 8, Line 53).

Norman does not expressly disclose scanning the following scan line immediately after the reset period in which the first reset voltage is applied to all of said scan lines and the second reset voltage is applied to all of said drive lines.

However, Sumi does disclose during a reset period [i.e., between image display frames] after a scan period for scanning an arbitrary scan line [Fig. 10; 17 -- the bottom line in the first frame, for instance] is complete and before scanning the following scan line [Fig. 10; 17 -- the top line in the second frame, for instance] is started, applying a first reset voltage [Fig. 10; $V_g = 0$] to all of said scan lines and applying a second reset voltage [Fig. 10; via 35] to all of said drive lines; and scanning the following scan line immediately after the reset period in which the first reset voltage is applied to all of said scan lines and the second reset voltage is applied to all of said drive lines (see Column 13, Line 63 - Column 14, Line 39).

Art Unit: 2629

Norman and Sumi are analogous art, because they are from the shared inventive field of driving organic electroluminescent and LED display devices. Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use Sumi's resetting period technique with Norman's light-emitting display device, so as to eliminate residual potentials on the display electrodes.

Regarding claim 2, Norman discloses the difference between said second reset voltage and said first reset voltage is set to be lower than the light emission threshold voltage of said light-emitting element (see Column 7, Lines 3-18).

Regarding claim 3, Norman discloses said drive lines are connectable to either said drive source or a second reset voltage source [Fig. 3; V_C] for providing said second reset voltage, said scan lines are connectable to either a first reset voltage source [Fig. 3; V_R] for providing said first reset voltage or a reverse bias voltage source [Fig. 3; 45, 48] for providing a predetermined reverse bias potential (see Column 7, Line 3 - Column 8, Line 53).

Regarding claim 4, this claim is rejected by the reasoning applied in rejecting claim 3.

Regarding claim 5, Norman discloses said first reset voltage source provides a ground potential (see Column 7, Lines 3-34 and Column 8, Lines 1-36).

Regarding claim 6, this claim is rejected by the reasoning applied in rejecting claim 5.

Regarding claim 7, Norman discloses said reverse bias voltage sources are to have a same voltage as the voltage value determined by subtracting said second reset voltage from light emission specifying voltages of light-emitting elements (see Column 8, Lines 1-36).

Regarding claim 8, this claim is rejected by the reasoning applied in rejecting claim 7.

Regarding claim 9, this claim is rejected by the reasoning applied in rejecting claim 7.

Regarding claim 10, this claim is rejected by the reasoning applied in rejecting claim 7.

Regarding claim 11, Norman discloses said drive lines are connectable to either one of said drive sources, the second reset voltage source for providing said second reset voltage, or a grounding means for providing a ground potential, said scan lines are connectable to either the first reset voltage source for providing said first reset potential or the reverse bias voltage source for providing a predetermined reverse bias potential (see Column 7, Line 3 - Column 8, Line 53).

Regarding claim 12, this claim is rejected by the reasoning applied in rejecting claim 11.

Regarding claim 13, this claim is rejected by the reasoning applied in rejecting claim 5.

Regarding claim 14, this claim is rejected by the reasoning applied in rejecting claim 5.

Regarding claim 15, Norman discloses said reverse bias voltage source has a same voltage as the light emission specifying voltage of light-emitting elements (see Column 7, Lines 3-18).

Regarding claim 16, this claim is rejected by the reasoning applied in rejecting claim 15.

Regarding claim 17, this claim is rejected by the reasoning applied in rejecting claim 15.

Regarding claim 18, this claim is rejected by the reasoning applied in rejecting claim 15.

Response to Arguments

11. Applicant's arguments filed 9 April 2007 have been fully considered but they are not persuasive.

The applicant contends, "*claim 1 specifically recites that a first voltage is applied to the scan lines and a second voltage is applied to the drive lines -- in other words, a non-zero voltage is applied to each of the scan lines and the drive lines according to claim 1. However, according to [the cited prior art of Sumi et al (US 6,169,532 B1)], no voltage is applied to the gate lines, while a reset voltage is applied to the drain lines. Additionally, according to the present invention, as recited in claim 1, the reset period is used after each scan line (i.e. B 1, B2, B3, ...Bn) is complete. Therefore, claim 1 is additionally patentable over the cited references because*

Art Unit: 2629

Sumi because the Sumi reset voltage is only applied after a last scan line of a still image" (see Page 8 of the 'Amendment Under 37 C.F.R. 1.111' filed 9 April 2007). However, the examiner respectfully disagrees.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In this instance, the cited prior art of *Norman et al (US 5,719,589 A)* discloses, during a reset period after a scan period for scanning each scan line [Fig. 3; 13] is complete and before scanning the following scan line is started, applying a first non-zero reset voltage [Fig. 3; V_R] (see Column 7, Lines 26-28) to all of said scan lines and applying a second reset voltage [Fig. 3; V_C] that is greater than said first reset voltage to all of said drive lines (see Column 5, Line 46 - Column 8, Line 53).

Norman does not expressly disclose scanning the following scan line immediately after the reset period in which the first reset voltage is applied to all of said scan lines and the second reset voltage is applied to all of said drive lines.

However, Sumi does disclose during a reset period [i.e., between image display frames] after a scan period for scanning an arbitrary scan line [Fig. 10; 17 -- the bottom line in the first

Art Unit: 2629

frame, for instance] is complete and before scanning the following scan line [Fig. 10; 17 -- the top line in the second frame, for instance] is started, applying a first reset voltage [Fig. 10; $V_g = 0$] to all of said scan lines and applying a second reset voltage [Fig. 10; via 35] to all of said drive lines; and scanning the following scan line immediately after the reset period in which the first reset voltage is applied to all of said scan lines and the second reset voltage is applied to all of said drive lines (see Column 13, Line 63 - Column 14, Line 39).

Norman and Sumi are analogous art, because they are from the shared inventive field of driving organic electroluminescent and LED display devices. Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use Sumi's resetting period technique with Norman's light-emitting display device, so as to eliminate residual potentials on the display electrodes.

By such reasoning, rejection of the claims is deemed necessary, proper, and thereby maintained at this time.

Art Unit: 2629

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2629

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jeff Piziali
3 July 2007